National Aeronautics and Space Administration

# MARSHALL STAR

Serving the Marshall Space Flight Center Community

March 4, 2010

## Gene Goldman named Marshall deputy director

*From a NASA Headquarters news release*

Arthur E. "Gene" Goldman has been reassigned to serve as deputy director of the Marshall Space Flight Center. Goldman returns to Marshall after serving as director of the John C. Stennis Space Center near Bay St. Louis, Miss.

Prior to being named director of Stennis, Goldman served as its deputy director from 2006 to 2008. Before arriving at Stennis, he served two years as manager of the Space Shuttle Main Engine Project at Marshall, and five years as the deputy manager of that project.

Goldman began his NASA career in 1990. Before joining NASA, he worked for three years as engineering manager for the Tennessee Valley Authority in Athens, Ala.; seven years as a project engineer/manager for Gulf States Utilities in Baton Rouge, La.; and four years as project engineer with the Tennessee Valley Authority in Hartsville, Tenn. He was appointed to the Senior Executive Service in 2004 after completing NASA's SES Candidate Development Program.

Gene Goldman

A native of Russell, Miss., Goldman earned the Registered Professional Engineer-Civil certification in 1983 and holds a bachelor of science degree in civil engineering from Mississippi State University. He completed the Senior Executive Fellows Program at Harvard University in Cambridge, Mass., in 2002 and the Congressional Operations Program at George Washington University in Washington in 2003. He is the recipient of numerous awards, including the prestigious NASA Exceptional Achievement Medal in 2002; the NASA Certificate of Appreciation in 1997; and the Marshall Center Director's Commendation in 1992.

## *Space Shuttle Program conducts final motor test*

*By Sanda Martel*

NASA's Space Shuttle Program conducted the final test firing of a reusable solid rocket motor Feb. 25 in Promontory, Utah.

The flight support motor, or FSM-17, burned for approximately 123 seconds – the same time each reusable solid rocket motor burns during an actual space shuttle launch. Preliminary indications show all test objectives were met. After final test data are analyzed, results for each objective will be published in a NASA report.

ATK Launch Systems, a unit of Alliant Techsystems Inc., in Promontory, north of Salt Lake City, manufactures and conducts the solid rocket motor tests.

*See **Final motor test** on page 2*


The final test firing of a space shuttle reusable solid rocket motor under way in Promontory, Utah, Feb. 25.

# THE FACE OF MISSION SUCCESS IS:
# John Pea

*Technical management engineer, Program Planning & Control Office*


- **Organization:** Shuttle Propulsion Office
- **Joined NASA**: 1984
- **Education**: Bachelor's degree in mechanical engineering, Southern University at Baton Rouge, La., 1974
- **Responsibilities**: The Program Planning & Control Office is a staff office, serving the Shuttle Propulsion Office manager. I am the center export representative for shuttle and am responsible for matters pertaining to the export of technical data for the propulsion elements – the reusable solid rocket boosters, reusable solid rocket motors, external tank, space shuttle main engines, and propulsion systems engineering and integration. I also serve as the shuttle representative for the Marshall Space Flight Center's Quality Management System, responsible for the control and maintenance of Shuttle Propulsion Office documentation. I ensure that it is in compliance with ISO 9001/AS9100 and agency requirements, and then I coordinate and prepare the organization for audits.
- **What are your thoughts about the coming retirement of the shuttle?** The retirement represents a major shift in space exploration and a new era of technology. It also culminates the working relationships between civil service and contractor employees who have been known as the legendary "shuttle family."
- **How do you hope to contribute to Marshall's future goals?** At the conclusion of the last shuttle flight, I hope to be able to support the Shuttle Transition Team and provide valuable experience to Marshall and also participate in follow-on programs assigned to the center.

# Final motor test *Continued from page 1*

"Today's test was a great deal more than the successful conclusion to a series of highly successful NASA/ATK-sponsored static tests that began more than three decades ago," said David Beaman, Reusable Solid Rocket Booster project manager at the Marshall Space Flight Center. The project, part of the Space Shuttle Propulsion Office, is responsible for motor design, development, manufacturing, assembly, testing and flight performance.

"These tests have built a base of engineering knowledge that continued engineering development of the reusable solid rocket motor system and the continued safe and successful launch of space shuttles," Beaman said. "They have provided an engineering model and lessons learned for additional applications in future launch systems."

The test – the 52nd conducted for NASA by ATK – marks the closure of a test program that has spanned more than three decades. The first test was in July 1977. The ATK-built motors have successfully launched the space shuttle into orbit 129 times.

*"Today's test was a great deal more than the successful conclusion to a series of highly successful NASA/ATK-sponsored static tests that began more than three decades ago."*

*— David Beaman, Reusable Solid Rocket Booster project manager*

The final test was conducted to ensure the safe flight of the four remaining space shuttle missions. A total of 43 design objectives were measured through 258 instrument channels during the two-minute static firing. The flight motor tested represents motors that will be used for all remaining space shuttle launches.

The space shuttle's reusable solid rocket motor is the largest solid rocket motor ever flown, the only one rated for human flight and the first designed for reuse. Each shuttle launch requires the boost of two reusable solid rocket motors to lift the 4.5-million-pound shuttle vehicle.

During space shuttle flights, solid rocket motors provide 80 percent of the thrust during the first two minutes of flight. Each motor, the primary component of the shuttle's twin solid rocket boosters, generates an average thrust of 2.6 million pounds and is just over 126 feet long and 12 feet in diameter.

For more information about the Space Shuttle Program, visit http://www.nasa.gov/shuttle.

*Martel, an AI Signal Research Inc. employee, supports the Office of Strategic Analysis & Communications.*

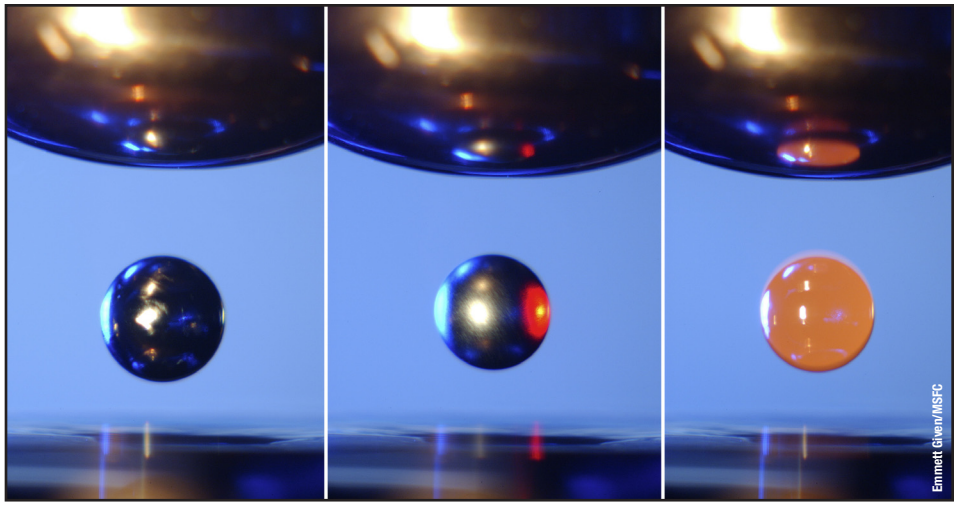
# *Future space station materials experiment sets bottom line at Marshall*

*By Steve Roy*

A materials science research experiment bound for the International Space Station made a stop by the Marshall Space Flight Center's Electrostatic Levitation Facility in Building 4708 to establish benchmarks for experiments in orbit.

The Levitation Observatory of Dendrite Evolution in Steel Ternary Alloy Rapid Solidification, or LODESTARS experiment, will study the role of convection, or stirring, of materials such as steel alloys and titanium aluminide in microgravity.

Marshall's Electrostatic Levitation Facility provides an environment free of convection, a high vacuum or pressure equivalent to 132 feet below sea level. Alloy samples are suspended inside a chamber by static electricity generated by electrodes. A laser beam heats the sample until it melts. The molten alloy sample floats in mid-air with no visible means of support. Scientists measure the sample's physical properties without interference of the sample touching the side of the facility, which could cause contamination.




Samples, about the size of peppercorns, are studied in the Electrostatic Levitator. A laser beam heats the samples, and scientists use optical instruments to measure properties at different temperatures.

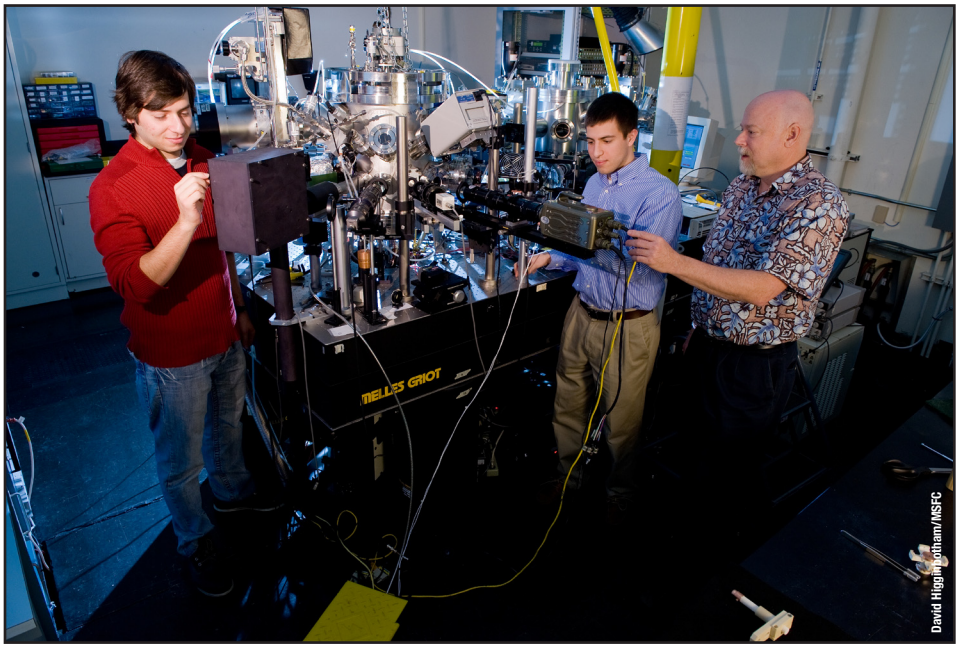
"Our facility is an excellent test bed for establishing on the ground the variables and parameters for materials science experiments planned for later operation on the space station," said Jan Rogers, facility lead engineer in the Engineering Directorate. "It is an important asset to help science teams maximize their experiment time in orbit."

"We are using the Marshall facility to investigate how the transformation of metallic alloys occurs with no induced convection," said Dr. Douglas Matson, principal investigator and associate professor of mechanical engineering at Tufts University in Medford, Mass. "The ground-based data will be used for developing computer models to control properties in commercially important structural materials such as steel products and predict the homogeneity developed during welding procedures."

LODESTARS's experiment team is represented by scientists from the European Space Agency, the Japan Aerospace Exploration Agency, NASA and many universities.

The experiment, managed by the Marshall Center, is slated to arrive at the International Space Station in 2012, where reduced gravity allows experiments to be run over a wide range of induced fluid flow conditions using the Electomagnetic Levitation Facility onboard the European Space Agency's Columbus experiment laboratory.

*Roy is a public affairs officer in the Office of Strategic Analysis & Communications.*




Graduate students Paul Choufani, left, and Matt Sherman, center, join Materials Science principal investigator Dr. Douglas Matson of Tufts University as Marshall Center's Electrostatic Levitation Facility is prepared for an experiment run in Building 4708. The researchers used the levitation facility in preparation for a planned series of materials and alloy experiments on the International Space Station in 2012.

# Celebrating Black History Month – together



Dan Schumacher, above, director of the Office of Strategic Analysis & Communications at the Marshall Space Flight Center, was a featured speaker at the center's closing event Feb. 25 for Black History Month. The "Donuts, Dialogue & Diversity" event, attended by nearly 100 people, also featured remarks by Audrey Robinson, director of Marshall's Office of Diversity & Equal Opportunity. In photo at right, Keisha Tafari, center, a Deltha-Critique Joint Venture employee supporting the Office of Human Capital, won first place in Team Redstone's Black History Month essay contest – the first Marshall team member to take the top award. Tafari's essay is available online at http://eo.msfc.nasa.gov. Looking on are Jamila Lewis, left, a Schafer Corp. employee supporting OSAC, who introduced the event's speakers; and Johnnie Wilson, a Dynetics Inc. employee, supporting the Office of the Chief Information Officer.

# Classified Ads

To submit a classified ad to the Marshall Star, go to Inside Marshall, to "Employee Resources," and click on "Employee Ads — Submit Ad." Ads are limited to 15 words, including contact numbers. No sales pitches. Deadline for the next issue, March 11, is 4:30 p.m. Thursday, March 4.

## *Miscellaneous*

Maytag Atlantis washer and dryer, top load washer, SS drum, $275/set. 351-1754

20-inch Sony Trinitron TV, remote control, $40. 797-1300

Two tickets to Broadway Theater League's Wizard of Oz, March 5, Row G, $54 each. 617-2246

Little Tikes blue sports car twin bed, $125; twin mattress/box spring, $50 obo. 606-7822

Lilly Flagg pool membership, $450. 797-2509

55-gallon aquarium, complete with stand, rocks, filters, hood, $250. 289-6313

Petco vehicle pet barrier, companion door, adjustable, fits all SUVs, $60. 882-0461

Kenmore white washer and dryer, $125. 617-9614

HP Officejet 6210 all-in-one printer, paper feeder inoperable, $25. 797-7829

Beige loveseat/couch, large pillows, $300; Sanyo 26" tube TV, $100. 684-2256

Writing desk and hutch, chair, $150. 479-4926

Coated steel scooter/wheelchair ramp, grated surface, approximately 30ft, modular, adjustable, dual rails, $500. 652-5177

Cipriani bowl chandelier, golden nickel, 6-plus-3 lights, 33"Wx 24.5"H, pic available, $100. 777-1810

CKC Yorkies, 4 weeks old, ready March 6, one female/two males, taking deposits, $550-$600. 425-8381

"Lunar Orbiter Photographic Atlas of the Moon" hardcover NASA book, Bowker & Hughes, 1971, $25. 534-4968

Toddler bed, white wood, underdrawer, rails, mattress, girly sheets, quilt, valance, $125. 617-1822

AKC Chocolate Labs, 6 weeks old on March 10, three males, three females. 878-5847

## *Vehicles*

2007 Ford Five Hundred Sedan Limited, loaded, 90k miles, $14,000. 931-4144

2007 Jeep Wrangler, V6, six speed, 2.5 inch lift, off-road wheels/tires, 38k miles, $17,000. 724-1756

2006 Jetta TDI, 5 speed, 46 mpg, 85k miles, $12,500. 931-993-7768

2005 Honda Accord Hybrid, gray, 255HP, V6-IMA, navigation, loaded, full warranty, $16,400. 464-9871 or 850-496-7329

2004 Dodge Intrepid, gray, 160k miles, $2,000 obo. 604-7424

2002 Buick LeSabre Limited, silver, leather, 109k miles, $6,800 firm. 536-5290

2001 Ford Taurus SES, $3,200 obo. 895-2959

2000 Saturn LS, four door, needs transmission, make offer. 883-2909

2000 Chevrolet Impala LS, power windows, seats, auto, air, 88k miles, $5,000 firm. 837-0559

1999 Toyota Camry LE, power seats, CD, alarm, keyless entry, 135k miles, $3,400. 520-1970

1998 Stingray RS180, new 140HP engine, 18-foot bowrider, fish/ski, seats seven, bimini, ski equipment. 640-6427

1998 Dodge Ram Quad Cab, V-8, auto, air, bed cover, $4,000. 468-3206

1996 Sea-Doo XP; Garage Kept; $1,455 Please call 256-931-4144

1992 GMC Diesel pickup, white, 150k miles, $3,500 or will trade for tractor. 379-4010

1985 Ford F-150, 4X4, SW-base, hunter green, tan interior, chrome wheels, new engine/tires, $2,950. 259-1523

## *Wanted*

Paddle boat; coin operated washer and dryer; bantam chicken eggs. 509-7907

Houses/offices to clean, available afternoons and weekends, please leave a message. 777-8595

Elliptical machine, good condition, less than $150. 828-5550 call after 5:30 p.m.

Canon Rebel lenses, wide angle, 70-200, etc. 325-6000

Basketball goal, good condition. 468-4406

Used youth/teen soccer jerseys, shorts or shoes for mission trip to Central America. 828-1234

Electrical work to do, wiring houses, detached garage, yard lights, adding/removing lights, switches, plugs. 468-8906

## *Carpool*

Cullman area to Arsenal/MSFC. 205-602-6868

# Dealing with gun violence in the workplace

## *Marshall's Protective Services Office offers tips on how to respond*

*By Rick Smith*

In the aftermath of the tragic shootings Feb. 12 at the University of Alabama in Huntsville in which three faculty members were killed, the Marshall Space Flight Center's Protective Services Office is offering guidelines to team members for responding to the unlikely presence of an armed threat in the workplace.

Every individual approaches a stressful situation differently. In the event of a job termination or any other potentially negative employee action, Protective Services personnel may be requested by managers to be included in the planning and execution of the action, to minimize the chance of an altercation.

In the event of workplace violence, team members should first call 911, if it is safe to do so. The Office of Center Operations will use the Emergency Warning System and other centerwide communications systems to notify and alert the work force of the danger and to keep them out of harm's way. Marshall security and Redstone Arsenal special response teams can reach any point on the center in about four minutes.

But when faced with what security personnel call an "active shooter" – any person, regardless of motive, who enters a workplace with the intent of causing death or serious bodily injury with a firearm – workers may be required to act before help can arrive. In any life-threatening situation, guidance from the NASA Counterintelligence Division and Marshall Protective Services emphasizes that team members should try to stay calm and use common sense. It is suggested that these options be considered:

- **Is escape possible?** Identify the position of the assailant or assailants, and assess exit points. Leave personal belongings behind to avoid delays. Help others to flee if possible, but do not move wounded individuals. Call 911 as soon as it is safe.
- **Take shelter if escape is blocked.** If exits appear blocked or the whereabouts of the shooter is unknown, find a hiding place that will offer some protection from gunfire but will not restrict vision or ability to move. Remain quiet. Turn off phones and other audible devices. If possible, lock and barricade doors, assist injured team members and call 911.
- **Take action against the shooter.** This should always be a last resort, undertaken in only the most extreme circumstances. If faced with immediate, mortal danger, attempt to disrupt or incapacitate the shooter as aggressively as possible. Yell loudly. Throw hard objects, or improvise a weapon from whatever is at hand.

Because 911 systems may be overwhelmed by incoming calls during crisis situations, one should keep alternate numbers handy. The Marshall Protective Services Control Center may be reached at 544-4353, or at 544-4357 Option 1. If possible, use a Marshall land line to make the call. If calling by cellphone, immediately inform the operator the call is coming from the Marshall Center. Callers should be prepared to identify themselves; their location; the type of incident; the number of coworkers and wounded personnel in their vicinity; and as much information about the shooter or shooters as possible, including their exact location, description and weapons in use.

No matter what action team members take in the event of an attack, they should also be aware of responding law enforcement officers, whose first responsibility is to locate, contain and stop the shooter as quickly as possible. If confronted or addressed by police or security personnel, fleeing workers should keep calm; follow directions; drop any items they are carrying and raise their hands; and refrain from pointing, yelling or making quick movements toward the officer. Once directed to do so, continue to exit in the direction from which the officer came.

In the wake of a shooting, NASA's Employee Assistance Program will be available to assist those affected by the incident. For more information, visit http://ohc.msfc.nasa.gov/eso/eap.

For a comprehensive guide to dealing with workplace gun violence, visit http://inside.msfc.nasa.gov/sa/nceb_Active-Shooter-Incidents.pdf.

To learn more about the Protective Services Office, part of the Marshall Center's Office of Center Operations, visit http://co.msfc.nasa.gov/ad50.

*Smith, an AI Signal Research Inc. employee, supports the Office of Strategic Analysis & Communications.*

## *NASA College Scholarship Fund now accepting applications from NASA dependents*

The NASA College Scholarship Fund Inc., a nonprofit organization managed by Johnson Space Center in Houston, will award six scholarships to qualified NASA dependents pursuing studies in science and engineering fields. Packets can be picked up at the Exchange Wellness Center in Building 4315 or the Space Shop in Building 4203, or may be downloaded at http://nasapeople.nasa.gov/nasascholarship/index.htm.

The deadline to apply is March 19. For more information and eligibility requirements, contact Bill Mayo at 544-7220 or visit http://nasapeople.nasa.gov/nasascholarship/index.htm.

# *Space shuttle Discovery rolls out to launch pad*

Space shuttle Discovery arrived at the launch pad at the Kennedy Space Center, Fla., March 3, where preparations continue for the STS-131 mission to the International Space Station. NASA managers are targeting April 5 for Discovery's launch on a 13-day mission to deliver a multi-purpose logistics module filled with science racks for laboratories aboard the space station. The mission includes three planned spacewalks.


NASA


Emmett Given/MSFC

## Don't judge a book by its cover – or a mirror segment bound for space

Each of the 18 James Webb Space Telescope mirror segments look exactly the same to the human eye, but they have their own unique number, location and responsibility on the massive 21.3-foot-diameter mirror assembly. Mirror testing is under way at the Marshall Space Flight Center's X-ray and Cryogenic Facility. The vacuum chamber was recently opened after completing test cycle one to change out two of the massive mirror segments. The engineering development unit, or test mirror, was removed for polishing and examination, and replaced with primary mirror segment A2. The fully populated stand outfitted with six numbered segments – A2, A5, A6, B3, B6 and C5 – was moved back into the vacuum chamber to resume this series of cryogenic testing that will continue through April. The Webb telescope mirror will be the largest primary mirror ever assembled in space. The telescope will give scientists clues about the formation of the universe and the evolution of our own solar system, from the first light after the Big Bang to the formation of star systems capable of supporting life on planets like Earth.

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